

atg gca gaa tct ttt ttt tct gat ttt ggc ttg ttg tgg tat ctg aag	48
Met Ala Glu Ser Phe Phe Ser Asp Phe Gly Leu Leu Trp Tyr Leu Lys	
1 5 10 15	
gag ctc aga aag gaa gag ttt tgg aaa ttt aag gag ctc ctc aaa caa	96
Glu Leu Arg Lys Glu Glu Phe Trp Lys Phe Lys Glu Leu Leu Lys Gln	
20 25 30	
cct ttg gag aaa ttt gaa ctc aag cca atc ccc tgg gct gag ctg aag	144
Pro Leu Glu Lys Phe Glu Leu Lys Pro Ile Pro Trp Ala Glu Leu Lys	
35 40 45	
aag gcc tcc aaa gaa gat gta gca aag ctg ctg gac aaa cat tac cca	192
Lys Ala Ser Lys Glu Asp Val Ala Lys Leu Leu Asp Lys His Tyr Pro	
50 55 60	
gga aag cag gca tgg gag gta aca ctg aac ctg ttt cta cag atc aat	240
Gly Lys Gln Ala Trp Glu Val Thr Leu Asn Leu Phe Leu Gln Ile Asn	
65 70 75 80	
agg aaa gat ctc tgg aca aag gct cag gaa gag atg aga aat aag cta	288
Arg Lys Asp Leu Trp Thr Lys Ala Gln Glu Glu Met Arg Asn Lys Leu	
85 90 95	
aac cca tac aga aag cat atg aag gaa aca ttt caa ctc ata tgg gag	336
Asn Pro Tyr Arg Lys His Met Lys Glu Thr Phe Gln Leu Ile Trp Glu	
100 105 110	
aag gaa acc tgt ctt cac gtc cct gag cat ttc tac aaa gaa acc atg	384
Lys Glu Thr Cys Leu His Val Pro Glu His Phe Tyr Lys Glu Thr Met	
115 120 125	
aaa aat gag tat aaa gaa ttg aat gac gca tat act gct gcg gct aga	432
Lys Asn Glu Tyr Lys Glu Leu Asn Asp Ala Tyr Thr Ala Ala Ala Arg	
130 135 140	
cga cac act gtg gtc ctg gaa ggt cct gat gga att gga aaa aca acc	480
Arg His Thr Val Val Leu Glu Gly Pro Asp Gly Ile Gly Lys Thr Thr	
145 150 155 160	
ctt tta aga aaa gtg atg ttg gac tgg gca gag gga aac tta tgg aag	528
Leu Leu Arg Lys Val Met Leu Asp Trp Ala Glu Gly Asn Leu Trp Lys	
165 170 175	
gac agt tac aat gag aag ctc gtc tac tgg cgg gag ctt tgc tca atg	576
Asp Ser Tyr Asn Glu Lys Leu Val Tyr Trp Arg Glu Leu Cys Ser Met	
180 185 190	
ttc att acc aac aag aac ttc cag att tta gac atg gaa aat acc agc	624
Phe Ile Thr Asn Lys Asn Phe Gln Ile Leu Asp Met Glu Asn Thr Ser	
195 200 205	

Fig. 1A

ctc gat gat ccc tcc ctg gcg att ctt tgc aaa gcg ctg gct cag cct Leu Asp Asp Pro Ser Leu Ala Ile Leu Cys Lys Ala Leu Ala Gln Pro 210 215 220	672
gtt tgt aaa ctc cga aaa ctc ata ttt act tct gtg tac ttt gga cat Val Cys Lys Leu Arg Lys Leu Ile Phe Thr Ser Val Tyr Phe Gly His 225 230 235 240	720
gat tca gaa tta ttt aag gca gtt ctt cac aac cct cat ctg aaa ctt Asp Ser Glu Leu Phe Lys Ala Val Leu His Asn Pro His Leu Lys Leu 245 250 255	768
ctg agc ctg tac ggc act agc ctc tcc cag tct gac atc aga cac ctg Leu Ser Leu Tyr Gly Thr Ser Leu Ser Gln Ser Asp Ile Arg His Leu 260 265 270	816
tgt gag acg ctg aaa cat cca atg tgc aag ata gaa gag ctg ata ctg Cys Glu Thr Leu Lys His Pro Met Cys Lys Ile Glu Glu Leu Ile Leu 275 280 285	864
gga aag tgt gac atc tcc agt gaa gtt tgt gaa gac atc gcc tcc gtc Gly Lys Cys Asp Ile Ser Ser Glu Val Cys Glu Asp Ile Ala Ser Val 290 295 300	912
ctg gcc tgc aac agc aag ctg aaa cac ctc tcc ttg gta gaa aat ccc Leu Ala Cys Asn Ser Lys Leu Lys His Leu Ser Leu Val Glu Asn Pro 305 310 315 320	960
ttg agg gac gaa gga atg acg ttg ctg tgt gaa gcc ctg aag cac tca Leu Arg Asp Glu Gly Met Thr Leu Leu Cys Glu Ala Leu Lys His Ser 325 330 335	1008
cac tgt gcc ctg gag agg ctg atg ttg atg ggc tgt ttc ctt act tcc His Cys Ala Leu Glu Arg Leu Met Leu Met Gly Cys Phe Leu Thr Ser 340 345 350	1056
gat tcc tgt aag gac att gct gct gtt ctt att tgc aat ggg aaa ctg Asp Ser Cys Lys Asp Ile Ala Ala Val Leu Ile Cys Asn Gly Lys Leu 355 360 365	1104
aag acc ctg aaa ctt ggg cat aat gaa ata gga gac act ggt gtc aga Lys Thr Leu Lys Leu Gly His Asn Glu Ile Gly Asp Thr Gly Val Arg 370 375 380	1152
cag tta tgt gca gct ttg cag cat cct cac tgt aaa tta gag tgt ctc Gln Leu Cys Ala Ala Leu Gln His Pro His Cys Lys Leu Glu Cys Leu 385 390 395 400	1200
ggg ctg caa acg tgt ccg atc acc cgt gcc tgc tgc gac gac atc gcc Gly Leu Gln Thr Cys Pro Ile Thr Arg Ala Cys Cys Asp Asp Ile Ala 405 410 415	1248

Fig. 1B

gca gca ctc atc gcc tgc aaa aca ctg agg agc ctg aac ctc gac tgg	1296
Ala Ala Leu Ile Ala Cys Lys Thr Leu Arg Ser Leu Asn Leu Asp Trp	
420 425 430	
att gcc ttg gat gct gat gca gtg gtg gtg ctg tgt gag gca ttg agc	1344
Ile Ala Leu Asp Ala Asp Ala Val Val Val Leu Cys Glu Ala Leu Ser	
435 440 445	
cac ccg gac tgt gcc ctg cag atg ctg ggg ctg cac aaa tct ggc ttt	1392
His Pro Asp Cys Ala Leu Gln Met Leu Gly Leu His Lys Ser Gly Phe	
450 455 460	
gat gaa gaa act cag aag atc ctg atg tct gtg gaa gaa aaa att ccc	1440
Asp Glu Glu Thr Gln Lys Ile Leu Met Ser Val Glu Glu Lys Ile Pro	
465 470 475 480	
cat ctg acc att tca cat gga cct tgg att gac gag gaa tac aag atc	1488
His Leu Thr Ile Ser His Gly Pro Trp Ile Asp Glu Glu Tyr Lys Ile	
485 490 495	
agg ggt gtg ctc ctc tga	1506
Arg Gly Val Leu Leu *	
500	

Fig. 1C

atg gca gcc tct ttc ttc tct gat ttt ggt ctt atg tgg tat ctg gag	48
Met Ala Ala Ser Phe Phe Ser Asp Phe Gly Leu Met Trp Tyr Leu Glu	
1 5 10 15	
gag ctc aaa aag gag gag ttc agg aaa ttt aaa gaa cat ctc aag caa	96
Glu Leu Lys Lys Glu Glu Phe Arg Lys Phe Lys Glu His Leu Lys Gln	
20 25 30	
atg act ttg cag ctt gaa ctc aag cag att ccc tgg act gag gtc aaa	144
Met Thr Leu Gln Leu Glu Leu Lys Gln Ile Pro Trp Thr Glu Val Lys	
35 40 45	
aaa gca tcc cgg gaa gaa ctt gca aac ctc ttg atc aag cac tat gaa	192
Lys Ala Ser Arg Glu Glu Leu Ala Asn Leu Leu Ile Lys His Tyr Glu	
50 55 60	
gaa caa caa gct tgg aac ata acc tta aga atc ttt caa aag atg gat	240
Glu Gln Gln Ala Trp Asn Ile Thr Leu Arg Ile Phe Gln Lys Met Asp	
65 70 75 80	
aga aag gat ctc tgc atg aag gtc atg agg gag aga aca ggt gag gga	288
Arg Lys Asp Leu Cys Met Lys Val Met Arg Glu Arg Thr Gly Glu Gly	
85 90 95	
gtc tgg gaa ggg gga agc ctt ctt ata atg agg act atg tcc taa	333
Val Trp Glu Gly Gly Ser Leu Leu Ile Met Arg Thr Met Ser *	
100 105 110	

Fig. 2

atg gaa gga gac aaa tcg ctc acc ttt tcc agc tac ggg ctg caa tgg Met Glu Gly Asp Lys Ser Leu Thr Phe Ser Ser Tyr Gly Leu Gln Trp 1 5 10 15	48
tgt ctc tat gag cta gac aag gaa gaa ttt cag aca ttc aag gaa tta Cys Leu Tyr Glu Leu Asp Lys Glu Glu Phe Gln Thr Phe Lys Glu Leu 20 25 30	96
cta aag aag aaa tct tca gaa tcg acc aca tgc tct att cca cag ttt Leu Lys Lys Lys Ser Ser Glu Ser Thr Thr Cys Ser Ile Pro Gln Phe 35 40 45	144
gaa atc gag aat gcc aac gtg gaa tgt ctg gca ctc ctc ttg cat gag Glu Ile Glu Asn Ala Asn Val Glu Cys Leu Ala Leu Leu Leu His Glu 50 55 60	192
tat tat gga gca tcg ctg gcc tgg gct acg tcc att agc atc ttt gaa Tyr Tyr Gly Ala Ser Leu Ala Trp Ala Thr Ser Ile Ser Ile Phe Glu 65 70 75 80	240
aac atg aac ctg cga acc ctc tcg gag aag gca cgg gat gac atg aaa Asn Met Asn Leu Arg Thr Leu Ser Glu Lys Ala Arg Asp Asp Met Lys 85 90 95	288
aaa att tca caa gct atg gaa caa gaa ggt gcc aca gca gca gag aca Lys Ile Ser Gln Ala Met Glu Gln Glu Gly Ala Thr Ala Ala Glu Thr 100 105 110	336
gaa gaa caa gaa att tca caa gct atg gaa caa gaa ggt gcc aca gca Glu Glu Gln Glu Ile Ser Gln Ala Met Glu Gln Glu Gly Ala Thr Ala 115 120 125	384
gca gag aca gaa gaa caa gga cat gga ggt gac aca tgg gac tac aag Ala Glu Thr Glu Glu Gln Gly His Gly Gly Asp Thr Trp Asp Tyr Lys 130 135 140	432
agt cac gtg atg acc aaa ttc gct gag gag gag gat gta cgt cgt agt Ser His Val Met Thr Lys Phe Ala Glu Glu Glu Asp Val Arg Arg Ser 145 150 155 160	480
ttt gaa aac act gct gct gac tgg ccg gaa atg caa acg ttg gct ggt Phe Glu Asn Thr Ala Ala Asp Trp Pro Glu Met Gln Thr Leu Ala Gly 165 170 175	528
gct ttt gat tca gac cgg tgg ggc ttc ccg cct cgc acg gtg gtt ctg Ala Phe Asp Ser Asp Arg Trp Gly Phe Arg Pro Arg Thr Val Val Leu 180 185 190	576
cac gga aag tca gga att ggg aaa tcg gct cta gcc aga agg atc gtg His Gly Lys Ser Gly Ile Gly Lys Ser Ala Leu Ala Arg Arg Ile Val 195 200 205	624

Fig. 3A

ctg tgc tgg ggc caa ggt gga ctc tac cag gga atg ttc tcc tac gtc Leu Cys Trp Ala Gln Gly Gly Leu Tyr Gln Gly Met Phe Ser Tyr Val 210 215 220	672
ttc ttc ctc ccc gtt aga gag atg cag cgg aag aag gag agc agt gtc Phe Phe Leu Pro Val Arg Glu Met Gln Arg Lys Lys Glu Ser Ser Val 225 230 235 240	720
aca gag ttc atc tcc agg gag tgg cca gac tcc cag gct ccg gtg acg Thr Glu Phe Ile Ser Arg Glu Trp Pro Asp Ser Gln Ala Pro Val Thr 245 250 255	768
gag atc atg tcc cga cca gaa agg ctg ttg ttc atc att gac ggt ttc Glu Ile Met Ser Arg Pro Glu Arg Leu Leu Phe Ile Ile Asp Gly Phe 260 265 270	816
gat gac ctg ggc tct gtc ctc aac aat gac aca aag ctc tgc aaa gac Asp Asp Leu Gly Ser Val Leu Asn Asn Asp Thr Lys Leu Cys Lys Asp 275 280 285	864
tgg gct gag aag cag cct ccg ttc acc ctc ata cgc agt ctg ctg agg Trp Ala Glu Lys Gln Pro Phe Thr Leu Ile Arg Ser Leu Leu Arg 290 295 300	912
aag gtc ctg ctc cct gag tcc ttc ctg atc gtc acc gtc aga gac gtg Lys Val Leu Leu Pro Glu Ser Phe Leu Ile Val Thr Val Arg Asp Val 305 310 315 320	960
ggc aca gag aag ctc aag tca gag gtc gtg tct ccc cgt tac ctg tta Gly Thr Glu Lys Leu Lys Ser Glu Val Val Ser Pro Arg Tyr Leu Leu 325 330 335	1008
gtt aga gga atc tcc ggg gaa caa aga atc cac ttg ctc ctt gag cgc Val Arg Gly Ile Ser Gly Glu Gln Arg Ile His Leu Leu Leu Glu Arg 340 345 350	1056
ggg att ggt gag cat cag aag aca caa ggg ttg cgt gcg atc atg aac Gly Ile Gly Glu His Gln Lys Thr Gln Gly Leu Arg Ala Ile Met Asn 355 360 365	1104
aac cgt gag ctg ctc gac cag tgc cag gtg ccc gcc gtg ggc tct ctc Asn Arg Glu Leu Leu Asp Gln Cys Gln Val Pro Ala Val Gly Ser Leu 370 375 380	1152
atc tgc gtg gcc ctg cag ctg cag gac gtg gtg ggg gag agc gtc gcc Ile Cys Val Ala Leu Gln Leu Gln Asp Val Val Gly Glu Ser Val Ala 385 390 395 400	1200
ccc ttc aac caa acg ctc aca ggc ctg cac gcc gct ttt gtg ttt cat Pro Phe Asn Gln Thr Leu Thr Gly Leu His Ala Ala Phe Val Phe His 405 410 415	1248

Fig. 3B

cag Gln	ctc Leu	acc Thr	cct Pro 420	cga Arg	ggc Gly	gtg Val	gtc Val	cgg Arg 425	cgc Arg	tgt Cys	ctc Leu	aat Asn	ctg Leu 430	gag Glu	gaa Glu	1296
aga Arg	gtt Val	gtc Val 435	ctg Leu	aag Lys	cgc Arg	ttc Phe	tgc Cys 440	cgt Arg	atg Met	gct Ala	gtg Val	gag Glu 445	gga Gly	gtg Val	tgg Trp	1344
aat Asn 450	agg Arg	aag Lys	tca Ser	gtg Val	ttt Phe	gat Asp 455	ggt Gly	gac Asp	gac Asp	ctc Leu	atg Met 460	gtt Val	caa Gln	gga Gly	ctc Leu	1392
ggg Gly 465	gag Glu	tct Ser	gag Glu	ctc Leu	cgt Arg 470	gct Ala	ctg Leu	ttt Phe	cac His	atg Met 475	aac Asn	atc Ile	ctt Leu	ctc Leu	cca Pro 480	1440
gac Asp	agc Ser	cac His	tgt Cys 485	gag Glu	gag Glu	tac Tyr	tac Tyr	acc Thr 490	ttc Phe	ttc Phe	cac His	ctc Leu	agt Ser	ctc Leu 495	cag Gln	1488
gac Asp	ttc Phe	tgt Cys	gcc Ala 500	gcc Ala	ttg Leu	tac Tyr	tac Tyr	gtg Val 505	tta Leu	gag Glu	ggc Gly	ctg Leu 510	gaa Glu	atc Ile	gag Glu	1536
cca Pro	gct Ala 515	ctc Leu	tgc Cys	cct Pro	ctg Leu	tac Tyr	gtt Val 520	gag Glu	aag Lys	aca Thr	aag Lys	agg Arg 525	tcc Ser	atg Met	gag Glu	1584
ctt Leu 530	aaa Lys	cag Gln	gca Ala	ggc Gly	ttc Phe	cat His 535	atc Ile	cac His	tgc Ser	ctt Leu	tgg Trp 540	atg Met	aag Lys	cgt Arg	ttc Phe	1632
ttg Leu 545	ttt Phe	ggc Gly	ctc Leu	gtg Val	agc Ser 550	gaa Glu	gac Asp	gta Val	agg Arg	agg Arg 555	cca Pro	ctg Leu	gag Glu	gtc Val	ctg Leu 560	1680
ctg Leu	ggc Gly	tgt Cys	ccc Pro 565	gtt Val	ccc Pro	ctg Leu	ggg Gly	gtg Val 570	aag Lys	cag Gln	aag Lys	ctt Leu	ctg Leu	cac His 575	tgg Trp	1728
gtc Val	tct Ser	ctg Leu	ttg Leu 580	ggt Gly	cag Gln	cag Gln	cct Pro 585	aat Asn	gcc Ala	acc Thr	acc Thr	cca Pro 590	gga Gly	gac Asp	acc Thr	1776
ctg Leu	gac Asp	gcc Ala 595	ttc Phe	cac His	tgt Cys	ctt Leu	ttc Phe 600	gag Glu	act Thr	caa Gln	gac Asp 605	aaa Lys	gag Glu	ttt Phe	gtt Val	1824
cgc Arg	ttg Leu 610	gca Ala	tta Leu	aac Asn	agc Ser	ttc Phe 615	caa Gln	gaa Glu	gtg Val	tgg Trp 620	ctt Leu	ccg Pro	att Ile	aac Asn	cag Gln	1872

Fig. 3C

aac ctg gac ttg ata gca tct tcc ttc tgc ctc cag cac tgt ccg tat	1920
Asn Leu Asp Leu Ile Ala Ser Ser Phe Cys Leu Gln His Cys Pro Tyr	
625 630 635 640	
ttg cgg aaa att cgg gtg gat gtc aaa ggg atc ttc cca aga gat gag	1968
Leu Arg Lys Ile Arg Val Asp Val Lys Gly Ile Phe Pro Arg Asp Glu	
645 650 655	
tcc gct gag gca tgt cct gtg gtc cct cta tgg atg cgg gat aag acc	2016
Ser Ala Glu Ala Cys Pro Val Val Pro Leu Trp Met Arg Asp Lys Thr	
660 665 670	
ctc att gag gag cag tgg gaa gat ttc tgc tcc atg ctt ggc acc cac	2064
Leu Ile Glu Glu Gln Trp Glu Asp Phe Cys Ser Met Leu Gly Thr His	
675 680 685	
cca cac ctg cgg cag ctg gac ctg ggc agc agc atc ctg aca gag cgg	2112
Pro His Leu Arg Gln Leu Asp Leu Gly Ser Ser Ile Leu Thr Glu Arg	
690 695 700	
gcc atg aag acc ctg tgt gcc aag ctg agg cat ccc acc tgc aag ata	2160
Ala Met Lys Thr Leu Cys Ala Lys Leu Arg His Pro Thr Cys Lys Ile	
705 710 715 720	
cag acc ctg atg ttt aga aat gca cag att acc cct ggt gtg cag cac	2208
Gln Thr Leu Met Phe Arg Asn Ala Gln Ile Thr Pro Gly Val Gln His	
725 730 735	
ctc tgg aga atc gtc atg gcc aac cgt aac cta aga tcc ctc aac ttg	2256
Leu Trp Arg Ile Val Met Ala Asn Arg Asn Leu Arg Ser Leu Asn Leu	
740 745 750	
gga ggc acc cac ctg aag gaa gag gat gta agg atg gcg tgt gaa gcc	2304
Gly Gly Thr His Leu Lys Glu Glu Asp Val Arg Met Ala Cys Glu Ala	
755 760 765	
tta aaa cac cca aaa tgt ttg ttg gag tct ttg agg ctg gat tgc tgt	2352
Leu Lys His Pro Lys Cys Leu Leu Glu Ser Leu Arg Leu Asp Cys Cys	
770 775 780	
gga ttg acc cat gcc tgt tac ctg aag atc tcc caa atc ctt acg acc	2400
Gly Leu Thr His Ala Cys Tyr Leu Lys Ile Ser Gln Ile Leu Thr Thr	
785 790 795 800	
tcc ccc agc ctg aaa tct ctg agc ctg gca gga aac aag gtg aca gac	2448
Ser Pro Ser Leu Lys Ser Leu Ser Leu Ala Gly Asn Lys Val Thr Asp	
805 810 815	
cag gga gta atg cct ctc agt gat gcc ttg aga gtc tcc cag tgc gcc	2496
Gln Gly Val Met Pro Leu Ser Asp Ala Leu Arg Val Ser Gln Cys Ala	
820 825 830	

Fig. 3D



ctg cag aag ctg ata ctg gag gac tgt ggc atc aca gcc acg ggt tgc	2544
Leu Gln Lys Leu Ile Leu Glu Asp Cys Gly Ile Thr Ala Thr Gly Cys	
835 840 845	
cag agt ctg gcc tca gcc ctc gtc agc aac cgg agc ttg aca cac ctg	2592
Gln Ser Leu Ala Ser Ala Leu Val Ser Asn Arg Ser Leu Thr His Leu	
850 855 860	
tgc cta tcc aac aac agc ctg ggg aac gaa ggt gta aat cta ctg tgt	2640
Cys Leu Ser Asn Asn Ser Leu Gly Asn Glu Gly Val Asn Leu Leu Cys	
865 870 875 880	
cga tcc atg agg ctt ccc cac tgt agt ctg cag agg ctg atg ctg aat	2688
Arg Ser Met Arg Leu Pro His Cys Ser Leu Gln Arg Leu Met Leu Asn	
885 890 895	
cag tgc cac ctg gac acg gct ggc tgt ggt ttt ctt gca ctt gcg ctt	2736
Gln Cys His Leu Asp Thr Ala Gly Cys Gly Phe Leu Ala Leu Ala Leu	
900 905 910	
atg ggt aac tca tgg ctg acg cac ctg agc ctt agc atg aac cct gtg	2784
Met Gly Asn Ser Trp Leu Thr His Leu Ser Leu Ser Met Asn Pro Val	
915 920 925	
gaa gac aat ggc gtg aag ctt ctg tgc gag gtc atg aga gaa cca tct	2832
Glu Asp Asn Gly Val Lys Leu Leu Cys Glu Val Met Arg Glu Pro Ser	
930 935 940	
tgt cat ctc cag gac ctg gag ttg gta aag tgt cat ctc acc gcc gcg	2880
Cys His Leu Gln Asp Leu Glu Leu Val Lys Cys His Leu Thr Ala Ala	
945 950 955 960	
tgc tgt gag agt ctg tcc tgt gtg atc tcg agg agc aga cac ctg aag	2928
Cys Cys Glu Ser Leu Ser Cys Val Ile Ser Arg Ser Arg His Leu Lys	
965 970 975	
agc ctg gat ctc acg gac aat gcc ctg ggt gac ggt ggg gtt gct gcg	2976
Ser Leu Asp Leu Thr Asp Asn Ala Leu Gly Asp Gly Gly Val Ala Ala	
980 985 990	
ctg tgc gag gga ctg aag caa aag aac agt gtt ctg acg aga ctc ggg	3024
Leu Cys Glu Gly Leu Lys Gln Lys Asn Ser Val Leu Thr Arg Leu Gly	
995 1000 1005	
ttg aag gca tgt gga ctg act tct gat tgc tgt gag gca ctc tcc ttg	3072
Leu Lys Ala Cys Gly Leu Thr Ser Asp Cys Cys Glu Ala Leu Ser Leu	
1010 1015 1020	
gcc ctt tcc tgc aac cgg cat ctg acc agt cta aac ctg gtg cag aat	3120
Ala Leu Ser Cys Asn Arg His Leu Thr Ser Leu Asn Leu Val Gln Asn	
1025 1030 1035 1040	

Fig. 3E

aac ttc agt ccc aaa gga atg atg aag ctg tgt tcg gcc ttt gcc tgt	3168
Asn Phe Ser Pro Lys Gly Met Met Lys Leu Cys Ser Ala Phe Ala Cys	
1045 1050 1055	
ccc acg tct aac tta cag ata att ggg ctg tgg aaa tgg cag tac cct	3216
Pro Thr Ser Asn Leu Gln Ile Ile Gly Leu Trp Lys Trp Gln Tyr Pro	
1060 1065 1070	
gtg caa ata agg aag ctg ctg gag gaa gtg cag cta ctc aag ccc cga	3264
Val Gln Ile Arg Lys Leu Leu Glu Glu Val Gln Leu Leu Lys Pro Arg	
1075 1080 1085	
gtc gta att gac ggt agt tgg cat tct ttt gat gaa gat gac cga cac	3312
Val Val Ile Asp Gly Ser Trp His Ser Phe Asp Glu Asp Asp Arg His	
1090 1095 1100	
aaa ata gga ctt act ttc cgg ctc cct gaa agc cgg gca tgg cca tgt	3360
Lys Ile Gly Leu Thr Phe Arg Leu Pro Glu Ser Arg Ala Trp Pro Cys	
1105 1110 1115 1120	
gcc ttg ctg tgg ggg atg aac cca gag cag aag aag cgt gtg tcg ctt	3408
Ala Leu Leu Trp Gly Met Asn Pro Glu Gln Lys Lys Arg Val Ser Leu	
1125 1130 1135	
ctg gct gga gac ttc aag agc agt aca cga ttt gcc aag tct ctc tgc	3456
Leu Ala Gly Asp Phe Lys Ser Ser Thr Arg Phe Ala Lys Ser Leu Cys	
1140 1145 1150	
ctg gcc acg gca aat ggt gag tcc cag aga gtt gac aac gtg gag cag	3504
Leu Ala Thr Ala Asn Gly Glu Ser Gln Arg Val Asp Asn Val Glu Gln	
1155 1160 1165	
agc tcc ccg caa ccc atg gca ggc acg gaa cac aaa caa gat aaa atg	3552
Ser Ser Pro Gln Pro Met Ala Gly Thr Glu His Lys Gln Asp Lys Met	
1170 1175 1180	
ttg agt gtt gga tat tcc gga gcc tgg tct gaa act gct gag ctc gaa	3600
Leu Ser Val Gly Tyr Ser Gly Ala Trp Ser Glu Thr Ala Glu Leu Glu	
1185 1190 1195 1200	
ggg ctt gga tcc aac agt gct gat cat gac cac gga ggt atg gcc tgg	3648
Gly Leu Gly Ser Asn Ser Ala Asp His Asp His Gly Gly Met Ala Trp	
1205 1210 1215	
tca cta ggg aga gag ctg agc tcg agg ggc ttg tgt cca aca gtg ctg	3696
Ser Leu Gly Arg Glu Leu Ser Ser Arg Gly Leu Cys Pro Thr Val Leu	
1220 1225 1230	
atg acc aca gcg gtg tgt cct ggt cac tgg gag cgg ctg ggc tct agg	3744
Met Thr Thr Ala Val Cys Pro Gly His Trp Glu Arg Leu Gly Ser Arg	
1235 1240 1245	

Fig. 3F

ggc tgg tgt ctt aac agt gct gat gac cac agc ggt gtg tcc tgg tca	3792
Gly Trp Cys Leu Asn Ser Ala Asp Asp His Ser Gly Val Ser Trp Ser	
1250 1255 1260	
ctg gga gcg gct ggg ctc gag ggg ctt gtg tcc aac agt gct gat gac	3840
Leu Gly Ala Ala Gly Leu Glu Gly Leu Val Ser Asn Ser Ala Asp Asp	
1265 1270 1275 1280	
cac agc ggt gtg gcc tgg tca ctg gga gcg gct ggg ctc gag ggg ctt	3888
His Ser Gly Val Ala Trp Ser Leu Gly Ala Ala Gly Leu Glu Gly Leu	
1285 1290 1295	
gtg tcc aac agt gct gat gac cac agc ggt gtg tcc tgg tca ctg gga	3936
Val Ser Asn Ser Ala Asp Asp His Ser Gly Val Ser Trp Ser Leu Gly	
1300 1305 1310	
gcg gct ggg ctc gag ggg ctt gtg tcc aac agt gct gat gac cac agc	3984
Ala Ala Gly Leu Glu Gly Leu Val Ser Asn Ser Ala Asp Asp His Ser	
1315 1320 1325	
ggt gtg tcc tgg tca ctg gga gcg gct ggg ctc gag ggg ctg gtg tct	4032
Gly Val Ser Trp Ser Leu Gly Ala Ala Gly Leu Glu Gly Leu Val Ser	
1330 1335 1340	
taa	4035
*	

Fig. 3G

atg gca tct tct gca gag ctg gac ttc aac ctg cag gct ctt ctg gag	48
Met Ala Ser Ser Ala Glu Leu Asp Phe Asn Leu Gln Ala Leu Leu Glu	
1 5 10 15	
cag ctc agc cag gat gag ttg agc aag ttc aag tct ctg atc aga aca	96
Gln Leu Ser Gln Asp Glu Leu Ser Lys Phe Lys Ser Leu Ile Arg Thr	
20 25 30	
atc tcc ctg gga aag gag cta cag acc gtc ccc cag aca gag gta gac	144
Ile Ser Leu Gly Lys Glu Leu Gln Thr Val Pro Gln Thr Glu Val Asp	
35 40 45	
aag gct aat ggg aag caa ctg gta gaa atc ttc acc agc cac tcc tgc	192
Lys Ala Asn Gly Lys Gln Leu Val Glu Ile Phe Thr Ser His Ser Cys	
50 55 60	
agc tac tgg gca ggg atg gca gcc atc cag gtc ttt gaa aag atg aat	240
Ser Tyr Trp Ala Gly Met Ala Ala Ile Gln Val Phe Glu Lys Met Asn	
65 70 75 80	
cga acg cat ctg tct ggg aga gct gat gaa cac tgt gtg atg ccc cca	288
Arg Thr His Leu Ser Gly Arg Ala Asp Glu His Cys Val Met Pro Pro	
85 90 95	
cct taa	294
Pro *	

Fig. 4

tccgggttagg	tatcaagctg	tagctggtag	gtaccagcac	caccaaacag	aagtgaacta	60
gtgaggtatg	ggctaagaga	gccccaaactt	ggacctgtag	agctgtcgga	ccaggaaagg	120
ggatctgttt	cgtctcagtc	cccaggcttt	gcttactggg	ctcctggatc	aagggagctt	180
gagttctcgc	tgcctcacct	ccagctcccc	aagtctgaac	tgtggtcact	ggtcttctgg	240
tctggacttg	atccttcccc	cagatcacc	atg gcc atg	gcc aag gcc	aga aag	293
			Met Ala Met	Ala Lys Ala	Arg Lys	
			1		5	
ccc cgg gag gca ttg ctc tgg gcc ttg agt gac ctt gag gag aac gat	341					
Pro Arg Glu Ala Leu Leu Trp Ala Leu Ser Asp Leu Glu Glu Asn Asp						
10 15 20						
ttc aag aag tta aag ttc tac tta cgg gat atg acc ctg tct gag ggg	389					
Phe Lys Lys Leu Lys Phe Tyr Leu Arg Asp Met Thr Leu Ser Glu Gly						
25 30 35 40						
cca gcc ccc act ggc cag agg ggg agt ttg gag ggg	425					
Pro Ala Pro Thr Gly Gln Arg Gly Ser Leu Glu Gly						
45 50						

Fig. 5

atg gcc atg gcc aag gcc aga aag ccc cgg gag gca ttg ctc tgg gcc	48
Met Ala Met Ala Lys Ala Arg Lys Pro Arg Glu Ala Leu Leu Trp Ala	
1 5 10 15	
ttg agt gac ctt gag gag aac gat ttc aag aag tta aag ttc tac tta	96
Leu Ser Asp Leu Glu Glu Asn Asp Phe Lys Lys Leu Lys Phe Tyr Leu	
20 25 30	
cgg gat atg acc ctg tct gag ggc cag ccc cca ctg gcc aga ggg gag	144
Arg Asp Met Thr Leu Ser Glu Gly Gln Pro Pro Leu Ala Arg Gly Glu	
35 40 45	
ttg gag ggc ctg att ccg gtg gac ctg gca gaa tta ctg att tca aag	192
Leu Glu Gly Leu Ile Pro Val Asp Leu Ala Glu Leu Leu Ile Ser Lys	
50 55 60	
tat gga gaa aag gag gct gtg aaa gtt gtc ctc aag ggc ttg aag gtc	240
Tyr Gly Glu Lys Glu Ala Val Lys Val Val Leu Lys Gly Leu Lys Val	
65 70 75 80	
atg aac ctg ttg gaa ctt gtg gac cag ctc agc cat att tgt ctg cat	288
Met Asn Leu Leu Glu Leu Val Asp Gln Leu Ser His Ile Cys Leu His	
85 90 95	
gat tac aga gaa gta tac cga gag cat gtg cgc tgc cta gag gaa tgg	336
Asp Tyr Arg Glu Val Tyr Arg Glu His Val Arg Cys Leu Glu Glu Trp	
100 105 110	
cag gaa gca gga gtc aat ggc aga tac aac cag gtg ctc ctg gtg gcc	384
Gln Glu Ala Gly Val Asn Gly Arg Tyr Asn Gln Val Leu Leu Val Ala	
115 120 125	
aag ccc agc tca gag agc cca gaa tca ctt gcc tgc ccc ttc ccg gag	432
Lys Pro Ser Ser Glu Ser Pro Glu Ser Leu Ala Cys Pro Phe Pro Glu	
130 135 140	
cag gag ctg gag tct gtc acg gtg gag gct cta ttt gat tca ggg gaa	480
Gln Glu Leu Glu Ser Val Thr Val Glu Ala Leu Phe Asp Ser Gly Glu	
145 150 155 160	
aag ccc tca ctg gcc cca tcc tta gtt gtg cta cag ggg tcg gct ggc	528
Lys Pro Ser Leu Ala Pro Ser Leu Val Val Leu Gln Gly Ser Ala Gly	
165 170 175	
act gga aag aca act ctc gcc aga aaa atg gtg ttg gac tgg gcc acc	576
Thr Gly Lys Thr Thr Leu Ala Arg Lys Met Val Leu Asp Trp Ala Thr	
180 185 190	
ggg act ctg tac cca ggc cgg ttt gat tat gtc ttt tat gta agc tgc	624
Gly Thr Leu Tyr Pro Gly Arg Phe Asp Tyr Val Phe Tyr Val Ser Cys	
195 200 205	

Fig. 6A

aaa Lys	gaa Glu	gtg Val	gtc Val	ctg Leu	ctg Leu	ctg Leu	gag Glu	agc Ser	aaa Lys	ctg Leu	gag Glu	cag Gln	ctc Leu	ctt Leu	ttc Phe	672
210215220																
tgg Trp	tgc Cys	tgc Cys	ggg Gly	gac Asp	aat Asn	caa Gln	gcc Ala	cct Pro	gtc Val	aca Thr	gag Glu	att Ile	ctg Leu	agg Arg	cag Gln	720
225230235240																
cca Pro	gag Glu	cgg Arg	ctc Leu	ctg Leu	ttc Phe	atc Ile	ctg Leu	gat Asp	ggc Gly	ttt Phe	gat Asp	gag Glu	ctg Leu	cag Gln	agg Arg	768
245250255																
ccc Pro	ttt Phe	gaa Glu	gaa Glu	aag Lys	ttg Leu	aag Lys	aag Lys	agg Arg	ggt Gly	ttg Leu	agt Ser	ccc Pro	aag Lys	gag Glu	agc Ser	816
260265270																
ctg Leu	ctg Leu	cac His	ctt Leu	cta Leu	att Ile	agg Arg	aga Arg	cat His	aca Thr	ctc Leu	ccc Pro	acg Thr	tgc Cys	tcc Ser	ctt Leu	864
275280285																
ctc Leu	atc Ile	acc Thr	acc Thr	cgg Arg	ccc Pro	ctg Leu	gct Ala	ttg Leu	agg Arg	aat Asn	ctg Leu	gag Glu	ccc Pro	ttg Leu	ctg Leu	912
290295300																
aaa Lys	caa Gln	gca Ala	cgt Arg	cat His	gtc Val	cat His	atc Ile	cta Leu	ggc Gly	ttc Phe	tct Ser	gag Glu	gag Glu	gag Glu	agg Arg	960
305310315320																
gcg Ala	agg Arg	tac Tyr	ttc Phe	agc Ser	tcc Ser	tat Tyr	ttc Phe	acg Thr	gat Asp	gag Glu	aag Lys	caa Gln	gct Ala	gac Asp	cgt Arg	1008
325330335																
gcc Ala	ttc Phe	gac Asp	att Ile	gta Val	cag Gln	aaa Lys	aat Asn	gac Asp	att Ile	ctc Leu	tac Tyr	aaa Lys	gcg Ala	tgt Cys	cag Gln	1056
340345350																
gtt Val	cca Pro	ggc Gly	att Ile	tgc Cys	tgg Trp	gtg Val	gtc Val	tgc Cys	tcc Ser	tgg Trp	ctg Leu	cag Gln	ggg Gly	cag Gln	atg Met	1104
355360365																
gag Glu	aga Arg	ggc Gly	aaa Lys	gtt Val	gtc Val	tta Leu	gag Glu	aca Thr	cct Pro	aga Arg	aac Asn	agc Ser	act Thr	gac Asp	atc Ile	1152
370375380																
ttc Phe	atg Met	gct Ala	tac Tyr	gtc Val	tcc Ser	acc Thr	ttt Phe	ctg Leu	ccg Pro	ccc Pro	gat Asp	gat Asp	gat Asp	ggg Gly	ggc Gly	1200
385390395400																
tgc Cys	tcc Ser	gag Glu	ctt Leu	tcc Ser	cgg Arg	cac His	agg Arg	gtc Val	ctg Leu	agg Arg	agt Ser	ctg Leu	tgc Cys	tcc Ser	cta Leu	1248
405410415																

Fig. 6B

goa gct gaa ggg att cag cac cag agg ttc cta ttt gaa gaa gct gag	1296
Ala Ala Glu Gly Ile Gln His Gln Arg Phe Leu Phe Glu Glu Ala Glu	
420 425 430	
ctc agg aaa cat aat tta gat ggc ccc agg ctt gcc gct ttc ctg agt	1344
Leu Arg Lys His Asn Leu Asp Gly Pro Arg Leu Ala Ala Phe Leu Ser	
435 440 445	
agt aac gac tac caa ttg gga ctt gcc atc aag aag ttc tac agc ttc	1392
Ser Asn Asp Tyr Gln Leu Gly Leu Ala Ile Lys Lys Phe Tyr Ser Phe	
450 455 460	
cgc cac atc agc ttc cag gac ttt ttt cat gcc atg tct tac ctg gtg	1440
Arg His Ile Ser Phe Gln Asp Phe Phe His Ala Met Ser Tyr Leu Val	
465 470 475 480	
aaa gag gac caa agc cgg ctg ggg aag gag tcc cgc aga gaa gtg caa	1488
Lys Glu Asp Gln Ser Arg Leu Gly Lys Glu Ser Arg Arg Glu Val Gln	
485 490 495	
agg ctg ctg gag gta aag gag cag gaa ggg aat gat gag atg acc ctc	1536
Arg Leu Leu Glu Val Lys Glu Gln Glu Gly Asn Asp Glu Met Thr Leu	
500 505 510	
act atg cag ttt tta ctg gac atc tcg aaa aaa gac agc ttc tcg aac	1584
Thr Met Gln Phe Leu Leu Asp Ile Ser Lys Lys Asp Ser Phe Ser Asn	
515 520 525	
ttg gag ctc aag ttc tgc ttc aga att tct ccc tgt tta gcg cag gat	1632
Leu Glu Leu Lys Phe Cys Phe Arg Ile Ser Pro Cys Leu Ala Gln Asp	
530 535 540	
ctg aag cat ttt aaa gaa cag atg gaa tct atg aag cac aac agg acc	1680
Leu Lys His Phe Lys Glu Gln Met Glu Ser Met Lys His Asn Arg Thr	
545 550 555 560	
tgg gat ttg gaa ttc tcc ctg tat gaa gct aaa ata aag aat ctg gta	1728
Trp Asp Leu Glu Phe Ser Leu Tyr Glu Ala Lys Ile Lys Asn Leu Val	
565 570 575	
aaa ggt att cag atg aac aat gta tca ttc aag ata aaa cat tca aat	1776
Lys Gly Ile Gln Met Asn Asn Val Ser Phe Lys Ile Lys His Ser Asn	
580 585 590	
gaa aag aaa tca cag agc cag aat tta ttt tct gtc aaa agc agc ttg	1824
Glu Lys Lys Ser Gln Ser Gln Asn Leu Phe Ser Val Lys Ser Ser Leu	
595 600 605	
agt cat gga cct aag gag gag caa aaa tgt cct tct gtc cat gga cag	1872
Ser His Gly Pro Lys Glu Glu Gln Lys Cys Pro Ser Val His Gly Gln	
610 615 620	

Fig. 6C



aag	gag	ggc	aaa	gat	aat	ata	gca	gga	aca	caa	aag	gaa	gct	tct	act	1920
Lys	Glu	Gly	Lys	Asp	Asn	Ile	Ala	Gly	Thr	Gln	Lys	Glu	Ala	Ser	Thr	
625					630					635					640	
gga	aaa	ggc	aga	ggg	aca	gag	gaa	aca	cca	aaa	aat	act	tac	ata	taa	1968
Gly	Lys	Gly	Arg	Gly	Thr	Glu	Glu	Thr	Pro	Lys	Asn	Thr	Tyr	Ile	*	
				645					650						655	

Fig. 6D

gcctgtgaat gatgcaatgg aaggtgtgct ggggtcgccc tgtgtcccgt gcataggago	60
atctcagcct ccaggtcctc tcctttgggg cttacggcac cccc atg cta cga acc	116
Met Leu Arg Thr	
1	
gca ggc agg gac ggc ctc tgt cgc ctg tcc acc tac ttg gaa gaa ctc	164
Ala Gly Arg Asp Gly Leu Cys Arg Leu Ser Thr Tyr Leu Glu Glu Leu	
5 10 15 20	
gag gct gtg gaa ctg aag aag ttc aag tta tac ctg ggg acc gcg aca	212
Glu Ala Val Glu Leu Lys Lys Phe Lys Leu Tyr Leu Gly Thr Ala Thr	
25 30 35	
gag ctg gga gaa ggc aag atc ccc tgg gga agc atg gag ata gcc ggt	260
Glu Leu Gly Glu Gly Lys Ile Pro Trp Gly Ser Met Glu Ile Ala Gly	
40 45 50	
ccc ctg gaa atg gcc cag ctg ctc atc acc cac ttc ggg	299
Pro Leu Glu Met Ala Gln Leu Leu Ile Thr His Phe Gly	
55 60 65	

Fig. 7

atg cta cga acc gca ggc agg gac ggc ctc tgt cgc ctg tcc acc tac	48
Met Leu Arg Thr Ala Gly Arg Asp Gly Leu Cys Arg Leu Ser Thr Tyr	
1 5 10 15	
ttg gaa gaa ctc gag gct gtg gaa ctg aag aag ttc aag tta tac ctg	96
Leu Glu Glu Leu Glu Ala Val Glu Leu Lys Lys Phe Lys Leu Tyr Leu	
20 25 30	
ggg acc gcg aca gag ctg gga gaa ggc aag atc ccc tgg gga agc atg	144
Gly Thr Ala Thr Glu Leu Gly Glu Gly Lys Ile Pro Trp Gly Ser Met	
35 40 45	
gag aag gcc ggt ccc ctg gaa atg gcc cag ctg ctc atc acc cac ttc	192
Glu Lys Ala Gly Pro Leu Glu Met Ala Gln Leu Leu Ile Thr His Phe	
50 55 60	
ggg cca gag gag gcc tgg agg ttg gct ctc agc acc ttt gag cgg ata	240
Gly Pro Glu Glu Ala Trp Arg Leu Ala Leu Ser Thr Phe Glu Arg Ile	
65 70 75 80	
aac agg aag gac ctg tgg gag aga gga cag aga gag gac ctg gtg agg	288
Asn Arg Lys Asp Leu Trp Glu Arg Gly Gln Arg Glu Asp Leu Val Arg	
85 90 95	
gat acc cca cct ggt ggc ccg tcc tca ctt ggg aac cag tca aca tgc	336
Asp Thr Pro Pro Gly Gly Pro Ser Ser Leu Gly Asn Gln Ser Thr Cys	
100 105 110	
ctt ctg gaa gtc tct ctt gtc act cca aga aaa gat ccc cag gaa acc	384
Leu Leu Glu Val Ser Leu Val Thr Pro Arg Lys Asp Pro Gln Glu Thr	
115 120 125	
tac agg gac tat gtc cgc agg aaa ttc cgg ctc atg gaa gac cgc aat	432
Tyr Arg Asp Tyr Val Arg Arg Lys Phe Arg Leu Met Glu Asp Arg Asn	
130 135 140	
gcg cgc cta ggg gaa tgt gtc aac ctc agc cac cgg tac acc cgg ctc	480
Ala Arg Leu Gly Glu Cys Val Asn Leu Ser His Arg Tyr Thr Arg Leu	
145 150 155 160	
ctg ctg gtg aag gag cac tca aac ccc atg cag gtc cag cag cag ctt	528
Leu Leu Val Lys Glu His Ser Asn Pro Met Gln Val Gln Gln Gln Leu	
165 170 175	
ctg gac aca ggc cgg gga cac gcg agg acc gtg gga cac cag gct agc	576
Leu Asp Thr Gly Arg Gly His Ala Arg Thr Val Gly His Gln Ala Ser	
180 185 190	
ccc atc aag ata gag acc ctc ttt gag cca gac gag gag cgc ccc gag	624
Pro Ile Lys Ile Glu Thr Leu Phe Glu Pro Asp Glu Glu Arg Pro Glu	
195 200 205	

Fig. 8A

cca ccg cgc acc gtg gtc atg caa ggc gcg gca ggg ata ggc aag tcc	672
Pro Pro Arg Thr Val Val Met Gln Gly Ala Ala Gly Ile Gly Lys Ser	
210 215 220	
atg ctg gca cac aag gtg atg ctg gac tgg gcg gac ggg aag ctc ttc	720
Met Leu Ala His Lys Val Met Leu Asp Trp Ala Asp Gly Lys Leu Phe	
225 230 235 240	
caa ggc aga ttt gat tat ctc ttc tac atc aac tgc agg gag atg aac	768
Gln Gly Arg Phe Asp Tyr Leu Phe Tyr Ile Asn Cys Arg Glu Met Asn	
245 250 255	
cag agt gcc acg gaa tgc agc atg caa gac ctc atc ttc agc tgc tgg	816
Gln Ser Ala Thr Glu Cys Ser Met Gln Asp Leu Ile Phe Ser Cys Trp	
260 265 270	
cct gag ccc agc gcg cct ctc cag gag ctc atc cga gtt ccc gag cgc	864
Pro Glu Pro Ser Ala Pro Leu Gln Glu Leu Ile Arg Val Pro Glu Arg	
275 280 285	
ctc ctt ttc atc atc gac ggc ttc gat gag ctc aag cct tct ttc cac	912
Leu Leu Phe Ile Ile Asp Gly Phe Asp Glu Leu Lys Pro Ser Phe His	
290 295 300	
gat cct cag gga ccc tgg tgc ctc tgc tgg gag gag aaa cgg ccc acg	960
Asp Pro Gln Gly Pro Trp Cys Leu Cys Trp Glu Glu Lys Arg Pro Thr	
305 310 315 320	
gag ctg ctt ctt aac agc tta att cgg aag aag ctg ctc cct gag cta	1008
Glu Leu Leu Leu Asn Ser Leu Ile Arg Lys Lys Leu Leu Pro Glu Leu	
325 330 335	
tct ttg ctc atc acc aca cgg ccc acg gct ttg gag aag ctc cac cgt	1056
Ser Leu Leu Ile Thr Thr Arg Pro Thr Ala Leu Glu Lys Leu His Arg	
340 345 350	
ctg ctg gag cac ccc agg cat gtg gag atc ctg ggc ttc tct gag gca	1104
Leu Leu Glu His Pro Arg His Val Glu Ile Leu Gly Phe Ser Glu Ala	
355 360 365	
gaa agg aag gaa tac ttc tac aag tat ttc cac aat gca gag cag gcg	1152
Glu Arg Lys Glu Tyr Phe Tyr Lys Tyr Phe His Asn Ala Glu Gln Ala	
370 375 380	
ggc caa gtc ttc aat tac gtg agg gac aac gag cct ctc ttc acc atg	1200
Gly Gln Val Phe Asn Tyr Val Arg Asp Asn Glu Pro Leu Phe Thr Met	
385 390 395 400	
tgc ttc gtc ccc ctg gtg tgc tgg gtg gtg tgt acc tgc ctc cag cag	1248
Cys Phe Val Pro Leu Val Cys Trp Val Val Cys Thr Cys Leu Gln Gln	
405 410 415	

Fig. 8B

cag Gln	ctg Leu	gag Glu	ggt Gly 420	ggg Gly	ggg Gly	ctg Leu	ttg Leu	aga Arg 425	cag Gln	acg Thr	tcc Ser	agg Arg	acc Thr 430	acc Thr	act Thr	1296
gca Ala	gtg Val	tac Tyr 435	atg Met	ctc Leu	tac Tyr	ctg Leu	ctg Leu	agt Ser 440	ctg Leu	atg Met	caa Gln	ccc Pro 445	aag Lys	ccg Pro	ggg Gly	1344
gcc Ala	ccg Pro 450	cgc Arg	ctc Leu	cag Gln	ccc Pro	cca Pro 455	ccc Pro	aac Asn	cag Gln	aga Arg	ggg Gly 460	ttg Leu	tgc Cys	tcc Ser	ttg Leu	1392
gcg Ala 465	gca Ala	gat Asp	ggg Gly	ctc Leu	tgg Trp 470	aat Asn	cag Gln	aaa Lys	atc Ile	cta Leu 475	ttt Phe	gag Glu	gag Glu	cag Gln	gac Asp 480	1440
ctc Leu	cgg Arg	aag Lys	cac His 485	ggc Gly	cta Leu	gac Asp	ggg Gly	gaa Glu 490	gac Asp	gtc Val	tct Ser	gcc Ala	ttc Phe 495	ctc Leu	aac Asn	1488
atg Met	aac Asn	atc Ile	ttc Phe 500	cag Gln	aag Lys	gac Asp	atc Ile	aac Asn 505	tgt Cys	gag Glu	agg Arg	tac Tyr	tac Tyr 510	agc Ser	ttc Phe	1536
atc Ile	cac His 515	ttg Leu	agt Ser	ttc Phe	cag Gln	gaa Glu	ttc Phe 520	ttt Phe	gca Ala	gct Ala	atg Met 525	tac Tyr	tat Tyr	atc Ile	ctg Leu	1584
gac Asp	gag Glu 530	ggg Gly	gag Glu	ggc Gly	ggg Gly	gca Ala 535	ggc Gly	cca Pro	gac Asp	cag Gln	gac Asp 540	gtg Val	acc Thr	agg Arg	ctg Leu	1632
ttg Leu 545	acc Thr	gag Glu	tac Tyr	gcg Ala	ttt Phe 550	tct Ser	gaa Glu	agg Arg	agc Ser	ttc Phe 555	ctg Leu	gca Ala	ctc Leu	acc Thr	agc Ser 560	1680
cgc Arg	ttc Phe	ctg Leu	ttt Phe	gga Gly 565	ctc Leu	ctg Leu	aac Asn	gag Glu 570	gag Glu	acc Thr	agg Arg	agc Ser	cac His 575	ctg Leu	gag Glu	1728
aag Lys	agt Ser	ctc Leu	tgc Cys 580	tgg Trp	aag Lys	gtc Val	tcg Ser	ccg Pro 585	cac His	atc Ile	aag Lys	atg Met 590	gac Asp	ctg Leu	ttg Leu	1776
cag Gln	tgg Trp 595	atc Ile	caa Gln	agc Ser	aaa Lys	gct Ala	cag Gln 600	agc Ser	gac Asp	ggc Gly	tcc Ser 605	acc Thr	ctg Leu	cag Gln	cag Gln	1824
ggc Gly 610	tcc Ser	ttg Leu	gag Glu	ttc Phe	ttc Phe	agc Ser 615	tgc Cys	ttg Leu	tac Tyr	gag Glu 620	atc Ile	cag Gln	gag Glu	gag Glu	gag Glu	1872

Fig. 8C

ttt atc cag cag gcc ctg agc cac ttc cag gtg atc gtg gtc agc aac	1920
Phe Ile Gln Gln Ala Leu Ser His Phe Gln Val Ile Val Val Ser Asn	
625 630 635 640	
att gcc tcc aag atg gag cac atg gtc tcc tcg ttc tgt ctg aag cgc	1968
Ile Ala Ser Lys Met Glu His Met Val Ser Ser Phe Cys Leu Lys Arg	
645 650 655	
tgc agg agc gcc cag gtg ctg cac ttg tat ggc gcc acc tac agc gcg	2016
Cys Arg Ser Ala Gln Val Leu His Leu Tyr Gly Ala Thr Tyr Ser Ala	
660 665 670	
gac ggg gaa gac cgc gcg agg tgc tcc gca gga gcg cac acg ctg ttg	2064
Asp Gly Glu Asp Arg Ala Arg Cys Ser Ala Gly Ala His Thr Leu Leu	
675 680 685	
gtg cag cta cca gag agg acc gtt ctg ctg gac gcc tac agt gaa cat	2112
Val Gln Leu Pro Glu Arg Thr Val Leu Leu Asp Ala Tyr Ser Glu His	
690 695 700	
ctg gca gcg gcc ctg tgc acc aat cca aac ctg ata gag ctg tct ctg	2160
Leu Ala Ala Ala Leu Cys Thr Asn Pro Asn Leu Ile Glu Leu Ser Leu	
705 710 715 720	
tac cga aat gcc ctg ggc agc cgg ggg gtg aag ctg ctc tgt caa gga	2208
Tyr Arg Asn Ala Leu Gly Ser Arg Gly Val Lys Leu Leu Cys Gln Gly	
725 730 735	
ctc aga cac ccc aac tgc aaa ctt cag aac ctg agg ctg aag agg tgc	2256
Leu Arg His Pro Asn Cys Lys Leu Gln Asn Leu Arg Leu Lys Arg Cys	
740 745 750	
cgc atc tcc agc tca gcc tgc gag gac ctc tct gca gct ctc ata gcc	2304
Arg Ile Ser Ser Ser Ala Cys Glu Asp Leu Ser Ala Ala Leu Ile Ala	
755 760 765	
aat aag aat ttg aca agg atg gat ctc agt ggc aac ggc gtt gga ttc	2352
Asn Lys Asn Leu Thr Arg Met Asp Leu Ser Gly Asn Gly Val Gly Phe	
770 775 780	
cca ggc atg atg ctg ctt tgc gag ggc ctg cgg cat ccc caa tgc agg	2400
Pro Gly Met Met Leu Leu Cys Glu Gly Leu Arg His Pro Gln Cys Arg	
785 790 795 800	
ctg cag atg att cag ttg agg aag tgt cag ctg gag tcc ggg gct tgt	2448
Leu Gln Met Ile Gln Leu Arg Lys Cys Gln Leu Glu Ser Gly Ala Cys	
805 810 815	
cag gag atg gct tct gtg ctt ggc acc aac cca cat ctg gtt gag ttg	2496
Gln Glu Met Ala Ser Val Leu Gly Thr Asn Pro His Leu Val Glu Leu	
820 825 830	

Fig. 8D

gac ctg aca gga aat gca ctg gag gat ttg ggc ctg agg tta cta tgc Asp Leu Thr Gly Asn Ala Leu Glu Asp Leu Gly Leu Arg Leu Leu Cys 835 840 845	2544
cag gga ctg agg cac cca gtc tgc aga cta cgg act ttg tgg ctg aag Gln Gly Leu Arg His Pro Val Cys Arg Leu Arg Thr Leu Trp Leu Lys 850 855 860	2592
atc tgc cgc ctc act gct gct gcc tgt gac gag ctg gcc tca act ctc Ile Cys Arg Leu Thr Ala Ala Ala Cys Asp Glu Leu Ala Ser Thr Leu 865 870 875 880	2640
agt gtg aac cag agc ctg aga gag ctg gac ctg agc ctg aat gag ctg Ser Val Asn Gln Ser Leu Arg Glu Leu Asp Leu Ser Leu Asn Glu Leu 885 890 895	2688
ggg gac ctc ggg gtg ctg ctg ctg tgt gag ggc ctc agg cat ccc acg Gly Asp Leu Gly Val Leu Leu Leu Cys Glu Gly Leu Arg His Pro Thr 900 905 910	2736
tgc aag ctc cag acc ctg cgg ttg ggc atc tgc cgg ctg ggc tct gcc Cys Lys Leu Gln Thr Leu Arg Leu Gly Ile Cys Arg Leu Gly Ser Ala 915 920 925	2784
gcc tgt gag ggt ctt tct gtg gtg ctc cag gcc aac cac aac ctc cgg Ala Cys Glu Gly Leu Ser Val Val Leu Gln Ala Asn His Asn Leu Arg 930 935 940	2832
gag ctg gac ttg agt ttc aac gac ctg gga gac tgg ggc ctg tgg ttg Glu Leu Asp Leu Ser Phe Asn Asp Leu Gly Asp Trp Gly Leu Trp Leu 945 950 955 960	2880
ctg gct gag ggg ctg caa cat ccc gcc tgc aga ctc cag aaa ctg tgg Leu Ala Glu Gly Leu Gln His Pro Ala Cys Arg Leu Gln Lys Leu Trp 965 970 975	2928
ctg gat agc tgt ggc ctc aca gcc aag gct tgt gag aat ctt tac ttc Leu Asp Ser Cys Gly Leu Thr Ala Lys Ala Cys Glu Asn Leu Tyr Phe 980 985 990	2976
acc ctg ggg atc aac cag acc ttg acc gac ctt tac ctg acc aac aac Thr Leu Gly Ile Asn Gln Thr Leu Thr Asp Leu Tyr Leu Thr Asn Asn 995 1000 1005	3024
gcc cta ggg gac aca ggt gtc cga ctg ctt tgc aag cgg ctg agc cat Ala Leu Gly Asp Thr Gly Val Arg Leu Leu Cys Lys Arg Leu Ser His 1010 1015 1020	3072
cct ggc tgc aaa ctc cga gtc ctc tgg tta ttt ggg atg gac ctg aat Pro Gly Cys Lys Leu Arg Val Leu Trp Leu Phe Gly Met Asp Leu Asn 1025 1030 1035 1040	3120

Fig. 8E







ggg aac cag cat ctg aga tac ttg gaa ata caa cat gtg gaa gtg gag Gly Asn Gln His Leu Arg Tyr Leu Glu Ile Gln His Val Glu Val Glu 210 215 220	672
tcc aag gct gtg aag ctt cta tgc agg gcg ctg aga tcc ccc cgg tgc Ser Lys Ala Val Lys Leu Leu Cys Arg Ala Leu Arg Ser Pro Arg Cys 225 230 235 240	720
cgt ctg cag tgt ctc agg ttg gaa gac tgc ttg gcc acc cct aga att Arg Leu Gln Cys Leu Arg Leu Glu Asp Cys Leu Ala Thr Pro Arg Ile 245 250 255	768
tgg act gat ctt ggc aat aat ctt caa ggt aac ggg cat cta aag act Trp Thr Asp Leu Gly Asn Asn Leu Gln Gly Asn Gly His Leu Lys Thr 260 265 270	816
ctc ata cta aga aaa aac tcc ctg gag aac tgt ggg gcg tat tac ctg Leu Ile Leu Arg Lys Asn Ser Leu Glu Asn Cys Gly Ala Tyr Tyr Leu 275 280 285	864
tct gtg gcc cag ctg gag agg ctg tcg cag agt aag atg ctg acc cac Ser Val Ala Gln Leu Glu Arg Leu Ser Gln Ser Lys Met Leu Thr His 290 295 300	912
ctg agc ttg gca gaa aac gcc ttg aaa gat gaa ggg gcc aag cat att Leu Ser Leu Ala Glu Asn Ala Leu Lys Asp Glu Gly Ala Lys His Ile 305 310 315 320	960
tgg aat gcc ctg cca cac ctg aga tgt cct ctg cag agg ctg gta ctg Trp Asn Ala Leu Pro His Leu Arg Cys Pro Leu Gln Arg Leu Val Leu 325 330 335	1008
aga aag tgt gac ttg acc ttt aat tgc tgt cag gat atg atc tct gcg Arg Lys Cys Asp Leu Thr Phe Asn Cys Cys Gln Asp Met Ile Ser Ala 340 345 350	1056
ctc tgt aaa aat aaa acc ctg aaa agt ctt gac cta agt ttt aat agc Leu Cys Lys Asn Lys Thr Leu Lys Ser Leu Asp Leu Ser Phe Asn Ser 355 360 365	1104
ctg aag gat gat ggg gtg atc ctg ctg tgt gag gcc ctg aag aac cct Leu Lys Asp Asp Gly Val Ile Leu Leu Cys Glu Ala Leu Lys Asn Pro 370 375 380	1152
gac tgt aca tta cag atc ctg gag ctg gaa aac tgc ctg ttt acc tcc Asp Cys Thr Leu Gln Ile Leu Glu Leu Glu Asn Cys Leu Phe Thr Ser 385 390 395 400	1200
atc tgc tgc cag gcc atg gct tcc atg ctc cgc aaa aac caa cat ctg Ile Cys Cys Gln Ala Met Ala Ser Met Leu Arg Lys Asn Gln His Leu 405 410 415	1248

Fig. 9B

aga cat ctg gac ttg agc aag aat gcg att gga gtc tat ggt att ctg	1296
Arg His Leu Asp Leu Ser Lys Asn Ala Ile Gly Val Tyr Gly Ile Leu	
420 425 430	
acc ttg tgc gag gcc ttc tca agc caa aag aag aga gaa gag gtc att	1344
Thr Leu Cys Glu Ala Phe Ser Ser Gln Lys Lys Arg Glu Glu Val Ile	
435 440 445	
ttc tgt att cct gcc tgg act cga ata act agc ttc tcc cca act cct	1392
Phe Cys Ile Pro Ala Trp Thr Arg Ile Thr Ser Phe Ser Pro Thr Pro	
450 455 460	
cac cca ccc gac ttc acg gga aaa agt gac tgc cta tcc cag att aat	1440
His Pro Pro Asp Phe Thr Gly Lys Ser Asp Cys Leu Ser Gln Ile Asn	
465 470 475 480	
cct tag	1446
Pro *	

Fig. 9C

atg gca gat tca tca tca tct tct ttc ttt cct gat ttt ggg ctg cta	48
Met Ala Asp Ser Ser Ser Ser Ser Phe Phe Pro Asp Phe Gly Leu Leu	
1 5 10 15	
ttg tat ttg gag gag cta aac aaa gag gaa tta aat aca ttc aag tta	96
Leu Tyr Leu Glu Glu Leu Asn Lys Glu Glu Leu Asn Thr Phe Lys Leu	
20 25 30	
ttc cta aag gag acc atg gaa cct gag cat ggc ctg aca ccc tgg act	144
Phe Leu Lys Glu Thr Met Glu Pro Glu His Gly Leu Thr Pro Trp Thr	
35 40 45	
gaa gtg aag aag gcc agg cgg gag gac ctg gcc aat ttg atg aag aaa	192
Glu Val Lys Lys Ala Arg Arg Glu Asp Leu Ala Asn Leu Met Lys Lys	
50 55 60	
tat tat cca gga gag aaa gcc tgg agt gtg tct ctc aaa atc ttt ggc	240
Tyr Tyr Pro Gly Glu Lys Ala Trp Ser Val Ser Leu Lys Ile Phe Gly	
65 70 75 80	
aag atg aac ctg aag gat ctg tgt gag aga gcg aaa gaa gag atc aac	288
Lys Met Asn Leu Lys Asp Leu Cys Glu Arg Ala Lys Glu Glu Ile Asn	
85 90 95	
tgg tcg gcc cag act ata gga cca gat gat gcc aag gct gga gag aca	336
Trp Ser Ala Gln Thr Ile Gly Pro Asp Asp Ala Lys Ala Gly Glu Thr	
100 105 110	
caa gaa gat cag gag gca gtg ctg ggt gat gga aca gaa tac aga aat	384
Gln Glu Asp Gln Glu Ala Val Leu Gly Asp Gly Thr Glu Tyr Arg Asn	
115 120 125	
aga ata aag gaa aaa ttt tgc atc act tgg gac aag aag tct ttg gct	432
Arg Ile Lys Glu Lys Phe Cys Ile Thr Trp Asp Lys Lys Ser Leu Ala	
130 135 140	
gga aag cct gaa gat ttc cat cat gga att gca gag aaa gat aga aaa	480
Gly Lys Pro Glu Asp Phe His His Gly Ile Ala Glu Lys Asp Arg Lys	
145 150 155 160	
ctg ttg gaa cac ttg ttt gat gtg gat gtc aaa acc ggt gca cag cca	528
Leu Leu Glu His Leu Phe Asp Val Asp Val Lys Thr Gly Ala Gln Pro	
165 170 175	
cag atc gtg gtg ctt cag gga gct gct gga gtt ggg aaa aca acc ttg	576
Gln Ile Val Val Leu Gln Gly Ala Ala Gly Val Gly Lys Thr Thr Leu	
180 185 190	
gtg aga aag gca atg tta gat tgg gca gag ggc agt ctc tac cag cag	624
Val Arg Lys Ala Met Leu Asp Trp Ala Glu Gly Ser Leu Tyr Gln Gln	
195 200 205	

Fig. 10A







ctc	caa	caa	agg	agg	cca	ttg	aag	ccg	tta	aga	ccg	ggt	cag	gtg	aac	2544
Leu	Gln	Gln	Arg	Arg	Pro	Leu	Lys	Pro	Leu	Arg	Pro	Gly	Gln	Val	Asn	
	835						840					845				
agg	aag	tta	aag	act	gaa	aag	gag	aca	caa	aac	tgc	cga	ctt	tcc	cga	2592
Arg	Lys	Leu	Lys	Thr	Glu	Lys	Glu	Thr	Gln	Asn	Cys	Arg	Leu	Ser	Arg	
	850					855					860					
cgg	cga	att	ggc	cct	ctg	gaa	aca	gcc	gac	caa	tca	cag	gca	gca	ggg	2640
Arg	Arg	Ile	Gly	Pro	Leu	Glu	Thr	Ala	Asp	Gln	Ser	Gln	Ala	Ala	Gly	
865					870					875					880	
gcg	cgc	cct	gca	gcg	ggg	ctc	cgg	ctg	cgg	ttc	cgt	gga	ctc	ggc	gac	2688
Ala	Arg	Pro	Ala	Ala	Gly	Leu	Arg	Leu	Arg	Phe	Arg	Gly	Leu	Gly	Asp	
			885					890						895		
tag																2691
*																

Fig. 10E



ggcacgagga tttatttatt gttcctggtc actgtctctt tgaggattgg tatctctgct	60
ccagaaaaag atg gca gcc tct ttc ttc tct gat ttt ggt ctt atg tgg tat	111
Met Ala Ala Ser Phe Phe Ser Asp Phe Gly Leu Met Trp Tyr	
1 5 10	
ctg gag gag ctc aaa aag gag gag ttc agg aaa ttt aaa gaa cat ctc	159
Leu Glu Glu Leu Lys Lys Glu Glu Phe Arg Lys Phe Lys Glu His Leu	
15 20 25 30	
aag caa atg act ttg cag ctt gaa ctc aag cag att ccc tgg act gag	207
Lys Gln Met Thr Leu Gln Leu Glu Leu Lys Gln Ile Pro Trp Thr Glu	
35 40 45	
gtc aaa aaa gca tcc cgg gaa gaa ctt gca aac ctc ttg atc aag cac	255
Val Lys Lys Ala Ser Arg Glu Glu Leu Ala Asn Leu Leu Ile Lys His	
50 55 60	
tat gaa gaa caa caa gct tgg aac ata acc tta aga atc ttt caa aag	303
Tyr Glu Glu Gln Gln Ala Trp Asn Ile Thr Leu Arg Ile Phe Gln Lys	
65 70 75	
atg gat aga aag gat ctc tgc atg aag gtc atg agg gag aga aca gga	351
Met Asp Arg Lys Asp Leu Cys Met Lys Val Met Arg Glu Arg Thr Gly	
80 85 90	
tac aca aag acc tat caa gct cac gca aag cag aaa ttc agc cgc tta	399
Tyr Thr Lys Thr Tyr Gln Ala His Ala Lys Gln Lys Phe Ser Arg Leu	
95 100 105 110	
tgg tcc agc aag tct gtc act gag att cac cta tac ttt gag gag gaa	447
Trp Ser Ser Lys Ser Val Thr Glu Ile His Leu Tyr Phe Glu Glu Glu	
115 120 125	
gtc aag caa gaa gaa tgt gac cat ttg gac cgc ctt ttt gct ccc aag	495
Val Lys Gln Glu Glu Cys Asp His Leu Asp Arg Leu Phe Ala Pro Lys	
130 135 140	
gaa act ggg aaa cag cca cgt aca gtg att att caa gga cca caa gga	543
Glu Thr Gly Lys Gln Pro Arg Thr Val Ile Ile Gln Gly Pro Gln Gly	
145 150 155	
att gga aaa acg aca ctc ctg atg aag ctg atg atg gcc tgg tcg gac	591
Ile Gly Lys Thr Thr Leu Leu Met Lys Leu Met Met Ala Trp Ser Asp	
160 165 170	
aac aag atc ttt cgg gat agg ttc ctg tac acg ttc tat ttc tgc tgc	639
Asn Lys Ile Phe Arg Asp Arg Phe Leu Tyr Thr Phe Tyr Phe Cys Cys	
175 180 185 190	

Fig. 11A

aga gaa ctg agg gag ttg ccg cca acg agt ttg gct gac ttg att tcc	687
Arg Glu Leu Arg Glu Leu Pro Pro Thr Ser Leu Ala Asp Leu Ile Ser	
195 200 205	
aga gag tgg cct gac ccc gct gct cct ata aca gag atc gtg tct caa	735
Arg Glu Trp Pro Asp Pro Ala Ala Pro Ile Thr Glu Ile Val Ser Gln	
210 215 220	
ccg gag aga ctc ttg ttc gtc atc gac agc ttc gaa gag ctg cag ggc	783
Pro Glu Arg Leu Leu Phe Val Ile Asp Ser Phe Glu Glu Leu Gln Gly	
225 230 235	
ggc ttg aac gaa ccc gat tgc gat ctg tgt ggt gac ttg atg gag aaa	831
Gly Leu Asn Glu Pro Asp Ser Asp Leu Cys Gly Asp Leu Met Glu Lys	
240 245 250	
cgg ccg gtg cag gtg ctt ctg agc agt ttg ctg agg aag aag atg ctc	879
Arg Pro Val Gln Val Leu Leu Ser Ser Leu Leu Arg Lys Lys Met Leu	
255 260 265 270	
ccg gag gcc tcc ctg ctc atc gcc atc aaa ccc gtg tgc ccg aag gag	927
Pro Glu Ala Ser Leu Leu Ile Ala Ile Lys Pro Val Cys Pro Lys Glu	
275 280 285	
ctc cgg gat cag gtg acg atc tca gaa atc tac cag ccc cgg gga ttc	975
Leu Arg Asp Gln Val Thr Ile Ser Glu Ile Tyr Gln Pro Arg Gly Phe	
290 295 300	
aac gag agt gat agg tta gtg tat ttc tgc tgt ttc ttc aaa gac ccg	1023
Asn Glu Ser Asp Arg Leu Val Tyr Phe Cys Cys Phe Phe Lys Asp Pro	
305 310 315	
aaa aga gcc atg gaa gcc ttc aat ctt gta aga gaa agt gaa cag ctg	1071
Lys Arg Ala Met Glu Ala Phe Asn Leu Val Arg Glu Ser Glu Gln Leu	
320 325 330	
ttt tcc ata tgc caa atc ccg ctc ctc tgc tgg atc ctg tgt acc agt	1119
Phe Ser Ile Cys Gln Ile Pro Leu Leu Cys Trp Ile Leu Cys Thr Ser	
335 340 345 350	
ctg aag caa gag atg cag aaa gga aaa gac ctg gcc ctg acc tgc cag	1167
Leu Lys Gln Glu Met Gln Lys Gly Lys Asp Leu Ala Leu Thr Cys Gln	
355 360 365	
agc act acc tct gtg tac tcc tct ttc gtc ttt aac ctg ttc aca cct	1215
Ser Thr Thr Ser Val Tyr Ser Ser Phe Val Phe Asn Leu Phe Thr Pro	
370 375 380	
gag ggt gcc gag ggc ccg act ccg caa acc cag cac cag ctg aag gcc	1263
Glu Gly Ala Glu Gly Pro Thr Pro Gln Thr Gln His Gln Leu Lys Ala	
385 390 395	

Fig. 11B

ctg	tgc	tcc	ctg	gct	gca	gag	ggt	atg	tgg	aca	gac	aca	ttt	gag	ttt	1311
Leu	Cys	Ser	Leu	Ala	Ala	Glu	Gly	Met	Trp	Thr	Asp	Thr	Phe	Glu	Phe	
400405410																
tgt	gaa	gac	gac	ctc	cgg	aga	aat	ggg	gtt	gtt	gac	gct	gac	atc	cct	1359
Cys	Glu	Asp	Asp	Leu	Arg	Arg	Asn	Gly	Val	Val	Asp	Ala	Asp	Ile	Pro	
415420425430																
gcg	ctg	ctg	ggc	acc	aag	ata	ctt	ctg	aag	tac	ggg	gag	cgt	gag	agc	1407
Ala	Leu	Leu	Gly	Thr	Lys	Ile	Leu	Leu	Lys	Tyr	Gly	Glu	Arg	Glu	Ser	
435440445																
tcc	tac	gtg	ttc	ctc	cac	gtg	tgt	atc	cag	gag	ttc	tgt	gcc	gcc	ttg	1455
Ser	Tyr	Val	Phe	Leu	His	Val	Cys	Ile	Gln	Glu	Phe	Cys	Ala	Ala	Leu	
450455460																
ttc	tat	ttg	ctc	aag	agc	cac	ctt	gat	cat	cct	cac	cca	gct	gtg	aga	1503
Phe	Tyr	Leu	Leu	Lys	Ser	His	Leu	Asp	His	Pro	His	Pro	Ala	Val	Arg	
465470475																
tgt	gta	cag	gaa	ttg	cta	gtt	gcc	aat	ttt	gaa	aaa	gca	agg	aga	gca	1551
Cys	Val	Gln	Glu	Leu	Leu	Val	Ala	Asn	Phe	Glu	Lys	Ala	Arg	Arg	Ala	
480485490																
cat	tgg	att	ttt	ttg	ggg	tgt	ttt	cta	act	ggc	ctt	tta	aat	aaa	aag	1599
His	Trp	Ile	Phe	Leu	Gly	Cys	Phe	Leu	Thr	Gly	Leu	Leu	Asn	Lys	Lys	
495500505510																
gaa	caa	gaa	aaa	ctg	gat	gcg	ttt	ttt	ggc	ttc	caa	ctg	tcc	caa	gag	1647
Glu	Gln	Glu	Lys	Leu	Asp	Ala	Phe	Phe	Gly	Phe	Gln	Leu	Ser	Gln	Glu	
515520525																
ata	aag	cag	caa	att	cac	cag	tgc	ctg	aag	agc	tta	ggg	gag	cgt	ggc	1695
Ile	Lys	Gln	Gln	Ile	His	Gln	Cys	Leu	Lys	Ser	Leu	Gly	Glu	Arg	Gly	
530535540																
aat	cct	cag	gga	cag	gtg	gat	tcc	ttg	gcg	ata	ttt	tac	tgt	ctc	ttt	1743
Asn	Pro	Gln	Gly	Gln	Val	Asp	Ser	Leu	Ala	Ile	Phe	Tyr	Cys	Leu	Phe	
545550555																
gaa	atg	cag	gat	cct	gcc	ttt	gtg	aag	cag	gca	gtg	aac	ctc	ctc	caa	1791
Glu	Met	Gln	Asp	Pro	Ala	Phe	Val	Lys	Gln	Ala	Val	Asn	Leu	Leu	Gln	
560565570																
gaa	gct	aac	ttt	cat	att	att	gac	aac	gtg	gac	ttg	gtg	gtt	tct	gcc	1839
Glu	Ala	Asn	Phe	His	Ile	Ile	Asp	Asn	Val	Asp	Leu	Val	Val	Ser	Ala	
575580585590																
tac	tgc	tta	aaa	tac	tgc	tcc	agc	ttg	agg	aaa	ctc	tgt	ttt	tcc	gtt	1887
Tyr	Cys	Leu	Lys	Tyr	Cys	Ser	Ser	Leu	Arg	Lys	Leu	Cys	Phe	Ser	Val	
595600605																

Fig. 11C

caa Gln	aat Asn	gtc Val	ttt Phe 610	aag Lys	aaa Lys	gag Glu	gat Asp	gaa Glu 615	cac His	agc Ser	tct Ser	acg Thr	tcg Ser 620	gat Asp	tac Tyr	1935
agc Ser	ctc Leu	atc Ile 625	tgt Cys	tgg Trp	cat His	cac His	atc Ile 630	tgc Cys	tct Ser	gtg Val	ctc Leu	acc Thr 635	acc Thr	agc Ser	ggg Gly	1983
cac His	ctc Leu 640	aga Arg	gag Glu	ctc Leu	cag Gln	gtg Val 645	cag Gln	gac Asp	agc Ser	acc Thr	ctc Leu 650	agc Ser	gag Glu	tcg Ser	acc Thr	2031
ttt Phe 655	gtg Val	acc Thr	tgg Trp	tgt Cys	aac Asn 660	cag Gln	ctg Leu	agg Arg	cat His	ccc Pro 665	agc Ser	tgt Cys	cgc Arg	ctt Leu	cag Gln 670	2079
aag Lys	ctt Leu	gga Gly	ata Ile	aat Asn 675	aac Asn	gtt Val	tcc Ser	ttt Phe 680	tct Ser	ggc Gly	cag Gln	agt Ser	gtt Val	ctg Leu 685	ctc Leu	2127
ttt Phe	gag Glu	gtg Val	ctc Leu 690	ttt Phe	tat Tyr	cag Gln	cca Pro	gac Asp 695	ttg Leu	aaa Lys	tac Tyr	ctg Leu 700	agc Ser	ttc Phe	acc Thr	2175
ctc Leu	acg Thr	aaa Lys 705	ctc Leu	tct Ser	cgt Arg	gat Asp	gac Asp 710	atc Ile	agg Arg	tcc Ser	ctc Leu 715	tgt Cys	gat Asp	gcc Ala	ttg Leu	2223
aac Asn	tac Tyr 720	cca Pro	gca Ala	ggc Gly	aac Asn	gtc Val 725	aaa Lys	gag Glu	cta Leu	gcg Ala	ctg Leu 730	gta Val	aat Asn	tgt Cys	cac His	2271
ctc Leu 735	tca Ser	ccc Pro	att Ile	gat Asp	tgt Cys 740	gaa Glu	gtc Val	ctt Leu	gct Ala	ggc Gly 745	ctt Leu	cta Leu	acc Thr	aac Asn	aac Asn 750	2319
aag Lys	aag Lys	ctg Leu	acg Thr	tat Tyr 755	ctg Leu	aat Asn	gta Val	tcc Ser	tgc Cys 760	aac Asn	cag Gln	tta Leu	gac Asp	aca Thr 765	ggc Gly	2367
gtg Val	ccc Pro	ctt Leu	ttg Leu 770	tgt Cys	gaa Glu	gcc Ala	ctg Leu	tgc Cys 775	agc Ser	cca Pro	gac Asp	acg Thr	gtc Val 780	ctg Leu	gta Val	2415
tac Tyr	ctg Leu	atg Met 785	ttg Leu	gct Ala	ttc Phe	tgc Cys	cac His 790	ctc Leu	agc Ser	gag Glu	cag Gln	tgc Cys 795	tgc Cys	gaa Glu	tac Tyr	2463
atc Ile	tct Ser 800	gaa Glu	atg Met	ctt Leu	ctg Leu	cgt Arg 805	aac Asn	aag Lys	agc Ser	gtg Val	cgc Arg 810	tat Tyr	cta Leu	gac Asp	ctc Leu	2511

Fig. 11D

agt gcc aat gtc ctg aag gac gaa gga ctg aaa act ctc tgc gag gcc	2559
Ser Ala Asn Val Leu Lys Asp Glu Gly Leu Lys Thr Leu Cys Glu Ala	
815 820 825 830	
ttg aaa cat ccg gac tgc tgc ctg gat tca ctg tgt ttg gta aaa tgt	2607
Leu Lys His Pro Asp Cys Cys Leu Asp Ser Leu Cys Leu Val Lys Cys	
835 840 845	
ttt atc act gct gct ggc tgt gaa gac ctc gcc tct gct ctc atc agc	2655
Phe Ile Thr Ala Ala Gly Cys Glu Asp Leu Ala Ser Ala Leu Ile Ser	
850 855 860	
aat caa aac ctg aag att ctg caa att ggg tgc aat gaa atc gga gat	2703
Asn Gln Asn Leu Lys Ile Leu Gln Ile Gly Cys Asn Glu Ile Gly Asp	
865 870 875	
gtg ggt gtg cag ctg ttg tgt cgg gct ctg acg cat acg gat tgc cgc	2751
Val Gly Val Gln Leu Leu Cys Arg Ala Leu Thr His Thr Asp Cys Arg	
880 885 890	
tta gag att ctt ggg ttg gaa gaa tgt ggg tta acg agc acc tgc tgt	2799
Leu Glu Ile Leu Gly Leu Glu Glu Cys Gly Leu Thr Ser Thr Cys Cys	
895 900 905 910	
aag gat ctc gcg tct gtt ctc acc tgc agt aag acc ctg cag cag ctc	2847
Lys Asp Leu Ala Ser Val Leu Thr Cys Ser Lys Thr Leu Gln Gln Leu	
915 920 925	
aac ctg acc ttg aac acc ttg gac cac aca ggg gtg gtt gta ctc tgt	2895
Asn Leu Thr Leu Asn Thr Leu Asp His Thr Gly Val Val Val Leu Cys	
930 935 940	
gag gcc ctg aga cac cca gag tgt gcc ctg cag gtg ctc ggg ctg aga	2943
Glu Ala Leu Arg His Pro Glu Cys Ala Leu Gln Val Leu Gly Leu Arg	
945 950 955	
aaa act gat ttt gat gag gaa acc cag gca ctt ctg acg gct gag gaa	2991
Lys Thr Asp Phe Asp Glu Glu Thr Gln Ala Leu Leu Thr Ala Glu Glu	
960 965 970	
gag aga aat cct aac ctg acc atc aca gat gac tgt gac aca atc aca	3039
Glu Arg Asn Pro Asn Leu Thr Ile Thr Asp Asp Cys Asp Thr Ile Thr	
975 980 985 990	
agg gta gag atc tgattgcgag gaacctgggc tctgactcga acacctgcaa	3091
Arg Val Glu Ile	
aggacagggga ctgggaccgt tacttacatg acactgcacc caggagatac aaatcattga	3151
cactctgagt tgtgagattt ctggcacccc attcatagat ttgatatgat acacgtgggt	3211
tttatgtgct ctgtggcctt ggatgagtcg ctgaaaggcc ttcattggtct ctcggtctca	3271
caaggacctc ttaacccctc aataaagtgt tacatttcta aacattggaa aaaaaaaaaa	3331
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa	3368

Fig. 11E